Evaluation for Permit to Construct

COMPANY NAME, MAILING AND LOCATION ADDRESS:

ConocoPhilllips Company SCAQMD ID# 800362
Los Angeles Refinery, Carson Plant
1520 East Sepulveda Blvd.
Carson, CA 90745

EQUIPMENT DESCRIPTION:

Additions & modifications to the equipment description & conditions are underlined. Deletions to the equipment description and conditions are denoted by strikeouts. This is new equipment; add engine serial numbers after construction is complete.

Section H of the ConocoPhillips Facility Permit, ID# 800362

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 12: MISCELLANEOUS					
System 8: EMERGENCY IC ENGINES					
INTERNAL COMBUSTION ENGINE, EMERGENCY FIRE PUMP, 327 BHP, CUMMINS, MODEL NO. CFP9E-F40, SIX CYLINDERS, DIESEL FUEL, AFTERCOOLER, TURBOCHARGER, SERIAL NO. TBD A/N: 498235 Permit to Construct Issued: TBD	Dnew1		NOX: PROCESS UNIT; SOX: PROCESS UNIT	CO: 2.6 GRAMS/BHP-HR (4) [RULE 1303(a)(1) BACT; RULE 1470] NOX: 132 LBS/1000 GAL (1) [RULE 2012] NOx + ROG: 3.0 GRAMS/BHP-HR (4) [RULE 1303(a)(1) BACT; RULE 2005; RULE 1470] PM: 0.15 GRAMS/BHP-HR (4) [RULE 1303(a)(1) BACT; RULE 1470] PM: (9) [RULE 404] SOX: 6.24 LBS/1000 GAL (1) [RULE 2011]	B61.3 C1.24 C1.25 C1.new H23.xx I296.1 K67.xx
INTERNAL COMBUSTION ENGINE, EMERGENCY FIRE PUMP, 327 BHP, CUMMINS, MODEL NO. CFP9E-F40, SIX CYLINDERS, DIESEL FUEL, AFTERCOOLER, TURBOCHARGER, SERIAL NO. TBD A/N: 498236 Permit to Construct Issued: TBD	Dnew2		NOX: PROCESS UNIT; SOX: PROCESS UNIT	CO: 2.6 GRAMS/BHP-HR (4) [RULE 1303(a)(1) BACT; RULE 1470] NOX: 132 LBS/1000 GAL (1) [RULE 2012] NOx + ROG: 3.0 GRAMS/BHP-HR (4) [RULE 1303(a)(1) BACT; RULE 2005; RULE 1470] PM: 0.15 GRAMS/BHP-HR (4) [RULE 1303(a)(1) BACT; RULE 1470] PM: (9) [RULE 404] SOX: 6.24 LBS/1000 GAL (1) [RULE 2011]	B61.3 C1.24 C1.25 C1.new H23.xx I296.1 K67.xx

CONDITIONS:

Facility Conditions

F14.1 The operator shall not purchase diesel fuel containing sulfur compounds in excess of 15 ppm by weight as supplied by the supplier.

This condition shall become effective on or after June 1, 2004.

[**RULE 431.2, 5-4-1990**; RULE 431.2, 9-15-2000]

Note: Facility condition F14.1 already exists on the Facility Permit.

Device Conditions

B. Material/Fuel Type Limit

B61.3 The operator shall only use diesel fuel containing the following specified compounds:

Compound		ppm by weight
Sulfur	Less than or equal to	15

[RULE 1470, 6-1-2007; **RULE 431.2, 5-4-1990**; RULE 431.2, 9-15-2000]
[Devices subject to this condition: D930, Dnew1, Dnew2]

C. Throughput/Operating Limitation

C1.24 The operator shall limit the operating time to no more than 200 hour(s) in any one year.

To comply with this condition, the operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[**RULE 1304(a)-Modeling and Offset Exemption 6-14-1996; RULE 2012, 5-6-2005**]
[Devices subject to this condition: D930, Dnew1, Dnew2]

C1.25 The operator shall limit the maintenance and testing to no more than 50 hour(s) in any one year.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1470, 6-1-2007]
[Devices subject to this condition: D930, Dnew1, Dnew2]

C1.new The operator shall limit the maintenance and testing to no more than 4.2 hour(s) in any one month.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002]
[Devices subject to this condition: Dnew1, Dnew2]

H. Applicable Rules

H23.xx This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
PM	District Rule	1470
CO	40 CFR 60, Subpart	IIII
NOx	40 CFR 60, Subpart	IIII
PM	40 CFR 60, Subpart	IIII
ROG	40 CFR 60, Subpart	IIII
HAPs	40 CFR 63, Subpart	ZZZZ

[Rule 1470, 6-1-2007; **40 CFR 60, Subpart IIII, 7-16-2006; 40 CFR 63, Subpart ZZZZ, 1-18-2008]**
[Devices subject to this condition: Dnew1, Dnew2]

I. Administrative

I296.1 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

[**Rule 2005, 5-6-2005**]
[Devices subject to this condition: Dnew1, Dnew2]

K. Record Keeping/Reporting

K67.xx The operator shall keep records, in a manner approved by the District, for the following parameter(s) or items(s):

A log of engine operations, including manual and automatic operation, documenting the total time the engine is operated each month and the specific reason for operation as:

A. Emergency use
B. Maintenance and testing
C. Other (Describe the reason for the operation)

In addition, for each time the engine is manually started, the log shall include the date of engine operation, the specific reason for operation, and the totalizing hour meter readings (in hours and tenths of hours) at the beginning and end of the operation.

On or before January 15th of each year, the operator shall record in the engine log:

A. the total hours of engine operation for the previous calendar year, and
B. the total hours of engine operation for maintenance and testing for the previous calendar year.

Engine operation log(s) shall be retained on site for a minimum of five calendar years and shall be made available to the Executive Officer or representative upon request.

[RULE 1110.2, 2-1-2008; **RULE 1303(a)(1)-BACT; 5-10-1996;** RULE 1303(a)(1)-BACT; 12-6-2002; **RULE 1304(a)-Modeling and Offset Exemption 6-14-1996;** RULE 1470, 6-1-2007; **RULE 2012, 5-6-2005; RULE 3004(a)(4)-Periodic Monitoring; 12-12-1997**]
[Devices subject to this condition: Dnew1, Dnew2]

COMPLIANCE RECORD REVIEW

A check of the AQMD Compliance Database shows that this facility was issued 15 notices of violation (NOVs) since January 1, 2007. No NCs or NOVs were issued to the internal combustion engines since they have not been constructed at the facility yet.

BACKGROUND

ConocoPhillips-Carson Refinery is NOx and SOX RECLAIM facility. ConocoPhillips proposes to install two diesel-fired internal combustion (IC) engines, each driving an emergency fire pump. ConocoPhillips submitted the following applications listed in Table 1.

Table 1 - AQMD Applications Submitted

A/N	Date Submitted	Equipment	Type	Status	Previous A/N
498235	April 28, 2009	IC Engine, Emergency Fire Pump	10	20	n/a
498236	April 28, 2009	IC Engine, Emergency Fire Pump	10	20	n/a
498245	April 28, 2009	TV/RECLAIM Facility Permit Amendment	87	21	n/a

FEE SUMMARY

Table 2 – Fee Summary

A/N	Equipment	Type	Fee Required, $	Fee Submitted, $
498235	IC Engine, Emergency Fire Pump	10	$2,051.52	$ 2,051.52
	Expedited Processing Fee	--	$1,025.76	$1,025.76
498235	IC Engine, Emergency Fire Pump	10	$2,051.52	$ 2,051.52
	Expedited Processing Fee	--	$1,025.76	$1,025.76
498245	TV/RECLAIM Facility Permit Amendment	87	$1,687.63	$1,687.63
Total			$7,842.19	$7,842.19

PROCESS DESCRIPTION:

The diesel-fired engines proposed are two Cummins model CFP9E-F40, 327 bhp, 6-cylinder, turbocharged and aftercooled. As noted above, the proposed diesel-fired internal combustion (IC) engines will drive two emergency fire pumps in the firewater system at the Carson refinery.

Each proposed diesel generator is equipped with an integrated 500-gallon tank for diesel fuel storage. This tank is exempt from permitting under Rule 219(m)(4), which applies to equipment used exclusively for the storage of unheated organic materials with an initial boiling point of 302^{o}F or greater, or with an organic vapor pressure of 0.1 psia or less at 70^{o}F, not including liquid fuel storage greater than 40,000 gallons.

Installation of the emergency fire pumps is scheduled to begin in December 2009. Engine serial numbers to be added after installation.

EMISSIONS:

The emissions data for the Cummins CFP9E-F40 engine is as follows:

Table 3 - Cummins CFP9E-F40 Emission Data

Source	ROG	NOx	SOx	CO	PM
Manufacturer's Data, with 15 ppm diesel	0.123 grams/bhp-hr	2.338 grams/bhp-hr	--	1.417 grams/bhp-hr	0.118 grams/bhp-hr

The overall mass emissions are summarized in Table 4. A complete summary of the emissions with calculations is found in Appendix A.

Table 4 – Estimated Emissions (for 1 engine)

	lb/hour	lb/day, max[1]	30-day avg[2], lb/day	lb/year[3]
	R1 = R2	R1 = R2	R1 = R2	R1 = R2
NOx [4]	2.16	9.08	0.30	108.04
ROG	0.09	0.37	0.01	4.43
CO	1.02	4.29	0.14	51.03
SOx [5]	0.10	0.43	0.01	5.12
PM	0.08	0.36	0.01	4.25
PM10	0.08	0.34	0.01	4.08

1 Assumes each engine will operate 4.2 hr/day maximum for testing
2 Assumes each engine will operate 4.2 hr/month in a 30-day month for testing
3 Engine is limited to operate 50 hours/year for maintenance and testing.
4 NOx emission based on BACT limit of 3.0 gram/bhp-hr
5 SOx emissions based on 500 ppm sulfur diesel, Rule 2002, Table 2, (6.24 lb/1000 gal)

For applications deemed complete after December 31, 2008, Best Available Control Technology (BACT) for IC Engine, Stationary, Emergency, Compression Ignition, Fire Pump 175 ≤ bhp < 750 is based on the U.S. EPA Tier 3 Certification Levels Required for Compression-ignition Engines. Table 5 shows the BACT compliance for the proposed IC engine.

Table 5 – BACT Compliance

	NOx + NMHC	SOx	CO	PM
U.S. EPA Tier 3 Certification Levels Required for Emergency Compression-Ignition Fire Pump Engines, 175 ≤ bhp < 750 (10-3-2008 Revision)	3.0 gr/bhp-hr	Diesel Fuel Sulfur Content ≤ 0.05% by Weight; User only purchase diesel < 0.015 % by weight (Rule 431.2)	2.6 gr/bhp-hr	0.15 gr/bhp-hr
Cummins CFP9E-F40, 327 bhp	2.461 gr/bhp-hr	Rule 431.2: Diesel Fuel Sulfur ≤ 0.0015% by Weight	1.417 gr/bhp-hr	0.118 gr/bhp-hr
Comply with BACT?	Yes	Yes	Yes	Yes

EVALUATION:

PART 1 SCAQMD REGULATIONS

Rule 212	**Standards for Approving Permits** **November 14, 1997**
	This project is not considered a significant project due to the new equipment proposed. In accordance with Rule 219(c), a significant project is a new or modified facility in which: (1) the new or modified permit unit is located within 1000 feet of a school; (2) the new or modified facility has on-site emission increases exceeding the daily maximum specified in subdivision (g); or (3) the new or modified permit unit has an increased cancer risk greater than, or equal to, one in a million ($1x\ 10^{-6}$) during a lifetime of 70 years or pose a risk of nuisance. The IC engines are not within 1,000 feet of a school, the emission increase does not exceed the daily maximum specified in Rule 212(g), and the IC engines are exempt from Rule 1401 per Rule 1401(g)(1)(F). Therefore, a Rule 212 public notice is not required. See Regulation XXX for Title V public notice requirement.

Rule 401	**Visible Emissions** **November 9, 2001**
	The equipment is not expected to emit visible emissions.

Rule 402	**Nuisance** **May 7, 1976**
	The equipment is not expected to emit odorous emissions.

Rule 404	**Particulate Matter – Concentration** **February 7, 1986**
	Based on the manufacturer's data, the exhaust flow rate for each engine is 1,899 cfm. By interpolation at this flow rate, the maximum concentration of particulate matter allowed according to Table 404(a) is approximately **0.148** grains per cubic feet (gr/cf). Based on the manufacturer's emission factor data for PM, the PM emission rate is **0.0052** grains/dscf, which is below the allowable limits noted above. PM emission factor: 0.118 grams/bhp-hr (manufacturer's data) Exhaust flow rate**:** 1,899 cfm **(**Provided by manufacturer) $\frac{0.118\,\text{grams}}{bhp-hr} \times \frac{lb}{454 grams} \times 327\ \text{bhp} \times \frac{\text{min}}{1{,}899 cf} \times \frac{\text{hr}}{60\,\text{min}} \times \frac{7000\,\text{grains}}{1\ \text{lb}} = 0.0052\,\frac{\text{grains}}{\text{dscf}}$ Therefore, each engine should comply with Rule 404.

Rule 407	**Liquid and Gaseous Air Contaminants** **April 2, 1982**
	In accordance with Rule 407(b)(1), the provisions of this rule do not apply to emissions from stationary internal combustion engines.

Rule 409	**Combustion Contaminants** **August 7, 1981**
	The provisions of this rule do not apply to emissions from internal combustion engines.

Rule 431.2	**Sulfur Content of Liquid Fuels** **September 15, 2000**
	ConocoPhillips-Carson is a SOx RECLAIM facility. In accordance with Rule 431.2(e)(3), the facility shall not purchase any diesel fuel with the sulfur content greater than 15 ppm by weight as supplied by the supplier. A facility condition (F14.1) is already included on the facility permit requiring that the facility not purchase diesel fuel with sulfur content greater than 15 ppmw.

Rule 1110.2	**Emissions from Gaseous- and Liquid-Fueled Engines** **February 1, 2008**
	In accordance with Rule 1110.2(h)(2), the requirements specified in subdivision (d) of this rule shall not apply to engines used for fire-fighting, which have permit conditions that limit operation to 200 hours or less per year as determined by an elapsed operating time meter (permit condition C1.24). Therefore, these engines are exempt from the requirements of this rule.

REG XIII	**New Source Review** **December 6, 2002** **Application Deem Complete Date: May 19, 2009**
	The new construction proposed in this project will cause an emission increase of CO, ROG, and PM. The emission increase due to each engine is shown in Table 4. The following is a discussion of each requirement in NSR.
BACT: 1303(a)	BACT has been included in the design of the proposed project. BACT means the most stringent emission limitation or control technique which: (1) has been achieved in practice for such category or class of source; or (2) is contained in any State Implementation Plan (SIP) approved by the US EPA for such category or class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed source demonstrates to the satisfaction of the Executive Officer or designee that such limitations or control technique is not presently achievable; or (3) is any other emission limitation or control technique, found by the Executive Officer or designee to be technologically feasible for such class or category of sources or for a specific source, and cost effective as compared to measures as listed in the Air

REG XIII	**New Source Review** **December 6, 2002** **Application Deem Complete Date: May 19, 2009**
	Quality Management Plan (AQMP) or rules adopted by the District Governing Board. ConocoPhillips is proposing the emission levels specified in Table 3 for each new engine. Each engine will meet the BACT requirements for ROG, CO, and PM_{10} as shown in the BACT Compliance Table 5 (Tier 3 engine). The analysis of BACT for NOx and SOx is discussed under Rule 2005.
1303(b)(1)	Modeling. In accordance with Rule 1304(a)(4) – Exemptions (Emergency Equipment), each engine is exempt from the modeling requirements specified in 1303(b)(1) if the source is exclusively used as emergency standby equipment, provided the source does not operate more than 200 hours per year as evidenced by an engine-hour meter (condition C1.24).
1303(b)(2)	Offsets. No offsets are required since the 30-day average emission increases are less than 0.5 lbs/day for ROG, CO, or PM10 (See Table 4 and Appendix A).
1303(b)(3)	Sensitive Zone Requirements. ERC's are not required.
1303(b)(4)	Facility Compliance. This facility complies with all applicable District rules and regulations.
1303(b)(5)	Major Polluting Facilities. This is not a new major polluting facility or major modification at an existing major polluting facility. Therefore, the provisions of this rule do not apply to these engines.

Rule 1401	**New Source Review of Toxic Air Contaminants** **March 7, 2008** **Application Deem Complete Date: May 19, 2009**
	Rule 1401(g)(1)(F) – Emergency Internal Combustion Engines provides an exemption from the requirements of Rule 1401(d) – Requirements, if the engine is exempt under Rule 1304. These engines are exempt from modeling under Rule 1304 (and offsets are not required) since they will exclusively be used as emergency fire-fighting and will not operate more than 200 hours per year. Therefore, there engines are exempt from the requirements of ule 1401(d).

Rule 1401.1	**Requirements for New and Relocated Facilities Near Schools** **November 4, 2005** **Application Deemed Complete: May 19, 2009**
1401.1(b)	Rule 1401.1 applies to new and relocated, but not existing facilities. The ConocoPhillips Carson refinery is an existing facility.

Rule 1470	**Requirements For Stationary Diesel-Fueled Internal Combustion And Other Compression Ignition Engines** **June 1, 2007**
1470(c)(2)(A)	Does not apply, engines will not be located 500 feet or less from a school.
1470(c)(2)(B)	Does not apply; engines do no operate in response to the notification of an impending rotating outage.
1470(c)(2)(C)	(i) New stationary emergency standby diesel-fueled engines (>50 bhp), shall: (I) emit diesel PM at a rate less than or equal to 0.15 g/bhp-hr; or (II) meet the diesel PM standard specified in the Off-Road Compression Ignition Engine Standards for off-road engines with the same maximum rated power (Title 13 CCR Section 2423), whichever is more stringent; and (III) not operate more than 50 hours per year for maintenance and testing. The Cummins CFP9E-F40, 327 bhp, is an EPA Tier 3 engine with a PM emission factor of 0.118 g/bhp-hr and each engine will be limited to 50 hours per year for maintenance and testing (condition C1.25). Compliance is expected.
	(ii) Alternative standard was not requested.
	(iii) Does not apply; engines will not be located 100 meters or less from a school.
	(iv) New stationary emergency standby diesel-fueled CI engines (> 50 bhp) must meet the HC, NOx, NMHC + NOx, and CO Standards as specified in the Off-Road Compression-Ignition Engine Standards (Title 13, CCR, Section 2423). In accordance to Title 13, CCR, Section 2423, Table 1a, the applicable exhaust emission standards for the proposed IC engine are:

Maximum Rated Power, bhp	Tier	Model Year	NMHC+NOx	CO	PM
			gram/bhp-hr		
300<bhp<600	3	2006-2010	3.0	2.6	0.15
This engine 327 bhp	3	2009	2.461	1.417	0.118

	The exhaust emissions from the Cummins CFP9E-F40 are below the Tier 3 limits of Title 13, CCR, Section 2423, Table 1a. Compliance is expected.
1470(d)	The operator is subject to the recordkeeping, reporting, and monitoring requirements of this subdivision. The operator has provided the information required in subparagraph (d)(1)(C) with the permit application. Subparagraph (d)(7)(A) requires installation of a non-resettable hour meter (condition C1.24). Subparagraph (d)(9)(A) requires a monthly operating log (condition K67.2).

Rule 1472	**Requirements For Facilities With Multiple Stationary Emergency Standby Diesel-Fueled Internal Combustion Engines**	**March 7, 2008**
	After construction of these two new emergency ICE's, there will be a total of four stationary standby diesel-fueled internal combustion engines at this facility. Rule 1472(d)(3) requires the submission of a compliance plan on or before January 1, 2010. This facility is currently in compliance with Rule 1472.	

Rule 2005	**New Source Review for RECLAIM**	**May 6, 2005** **Application Deem Complete Date: May 19, 2009**
	ConocoPhillips-Carson is a NOx and SOx RECLAIM facility. The IC engines proposed will cause an emission increase of SOx and NOx. Based on the maximum rating of the engines to be installed, 50 hr/year operation and the NOx BACT limits proposed, the NOx and SOx controlled emission increases from each engine are 108.04 lbs/year and 5.12 lbs/year, respectively (see Table 4). The emission increase due to this project (two engines) is 216.08 lbs/year NOx and 10.24 lbs/year SOx. The following is a discussion of each applicable requirement in RECLAIM NSR for this project.	
2005(c)(1)	(A) BACT. The proposed NOx and SOx BACT limits are shown in Table 5, and each engine should meet the U.S. EPA Tier 3 Certification Level shown in Table 5.	
	(B) Modeling. In accordance with Rule 2005(k)(5) – Exemptions, each engine is exempt from the modeling requirements specified in 1303(c)(1)(B) if the equipment is exclusively used as emergency standby equipment, provided the source does not operate more than 200 hours per year as evidenced by an engine-hour meter (condition C1.24).	
2005(c)(2)	Sufficient RECLAIM Trading Credits. The NOx and SOx emission increases from this project are 216.08 lbs/year and 10.24 lbs/year, respectively. Checking the ConocoPhillips-Carson NOx and SOx RTC holding account, the facility currently holds sufficient RTCs to offset the annual emission increase for the first year of operation at a 1-to-1 ratio. (NOx: 298,889 lbs/year; SOx: 477,160 lbs/year)	
2005(c)(3)	Change of Operator. This subparagraph does not apply since this project is not for a change of operator.	
2005(c)(4)	Allocation Increase greater than Starting Allocation. The emission increase due to this project will not increase the facility's annual Allocation to a level greater than the facility's starting allocation (NOx: 1,292,790 lbs/year; SOx: 486,168 lbs/year) plus non-tradable credits (NOx: 0; SOx: 0).	
2005(d)	Emission Increase. NOx and SOx emission increases from this project are 216.08 lbs/year and 10.24 lbs/year, respectively.	

Rule 2005	**New Source Review for RECLAIM** — **May 6, 2005** — **Application Deem Complete Date: May 19, 2009**
2005(e)	Trading Zone Restrictions. The emission increase due to this project will not increase the facility's annual Allocation to a level greater than the facility's starting allocation (NOx: 1,292,790 lbs/year; SOx: 486,168 lbs/year) plus non-tradable credits.
2005(f)	Offsets. The facility will need to hold 216 lbs/year of NOx RTCs and 10 lbs/year of SOx RTCs at the commencement of each compliance year.
2005(g)	Additional Federal Requirements for Major Stationary Sources. The construction and operation of the emergency IC engines is not considered a major stationary source.
2005(h)	Public Notice. A public notice is not required pursuant to Rule 212. See Regulation XXX for Title V public notice requirement.
2005(i)	Rule 1401. See the discussion under Rule 1401.
2005(j)	Compliance with State and Federal New Source Review Requirements. The NOx and SOx emission increases will be included in the NSR Tracking System so the emissions can be reported the District Governing Board regarding the effectiveness of Rule 2005 in meeting the state and federal NSR requirements.

Rule 2011	**Requirements For Monitoring, Reporting, And Recordkeeping For Oxides Of Sulfur (SO_X) Emissions** — **May 6, 2005**
Rule 2012	**Requirements For Monitoring, Reporting, And Recordkeeping For Oxides Of Nitrogen (NO_X) Emissions** — **May 6, 2005**
	ConocoPhillips-Carson is a NOx and SOx RECLAIM facility. In accordance with Rule 2012(e)(1)(B)(i) any IC engine with 200 ≤ bhp < 1000 and operating ≤ 2190 hr/year; is a NOx process unit. In accordance with Rule 2011(d)(1), any equipment not designated in Rule 219 as equipment not requiring a written permit, and not classified as a major SOx source in Rule 2011(c)(1), is a SOx process unit. The proposed emergency IC engines are subject to the monitoring, reporting, and recordkeeping requirements for a NOx and SOx Process Unit. In accordance with Rule 2011(d)(2)(C), the facility has accepted the SOx emission factor of 6.24 lbs/1,000 gal diesel as specified in Rule 2002 as the sole method for determining mass emissions. The facility expressed interest in a SOx equipment specific emission rate since the current 6.24 lbs/1,000 gal diesel emission factor is based on the now obsolete 500 ppm sulfur diesel limit. Rule 431.2 currently requires the facility to only purchase diesel fuel with the sulfur content greater than 15 ppm by weight. Therefore, the facility believes they should be able to apply a SOx emission rate to reflect the current 15 ppm sulfur diesel limit. The RECLAIM Administration team has been contacted to evaluate an emission rate based on 15 ppm sulfur diesel. In the meantime, the facility has accepted the 6.24 lbs/1,000 gal

Rule 2011	**Requirements For Monitoring, Reporting, And Recordkeeping For Oxides Of Sulfur (SO_X) Emissions**	**May 6, 2005**
Rule 2012	**Requirements For Monitoring, Reporting, And Recordkeeping For Oxides Of Nitrogen (NO_X) Emissions**	**May 6, 2005**

diesel SOx emission factor.

In accordance with Rule 2012(e)(2)(C), the facility has accepted the NOx emission factor as specified in Rule 2002 as the sole method for determining mass emissions. In Rule 2002, Table 1 (RECLAIM NOx Emission Factors), the emission factor for ICEs*, All Fuels, is "Equivalent to permitted BACT limit." This proposed engine is a Tier 3 engine. The current Tier 3 BACT limit for NOx + ROG = 3.0 grams/bhp-hr. Converting the Tier 3 NOx + ROG BACT limit emissions from grams/bhp-hr to gal diesel/hr, the RECLAIM NOx emission factor is 132 lbs NOx/1,000 gal diesel for each engine based the highest fuel consumption rate and engine hp data provided by the manufacturer.

Full, standby, engine HP = 327

Fuel consumption, gal/hr = 16.4

NOx + ROG emission rate = 3.00 grams/bhp-hr

NOx emission factor:

$$\frac{3.00\,\text{grams}}{\text{bhp}-\text{hr}} \text{ x } 327\,\text{bhp} \text{ x } \frac{\text{lb}}{454\,\text{grams}} \text{ x } \frac{\text{hr}}{16.4\,\text{gal}} \text{ x } \frac{1{,}000\,\text{gal}}{1{,}000\,\text{gal}} = 132\,\frac{\text{lbs NOx}}{1{,}000\,\text{gal diesel}}$$

* Newly installed or modified after the year selected for maximum throughput for determining starting allocations pursuant to Rule 2002(c)(1), and meeting BACT limits in effect at the time of installation.

Regulation XXX	**Title V**	**March 16, 2001**

ConocoPhillips-Carson has been issued a Title V permit on November 7, 2008; the Title V permit was last revised on April 14, 2009. ConocoPhillips has applied for a revision to this Title V permit for construction of two new emergency IC engines. These emergency IC engines are a "**significant permit revision**" as defined in Rule 3000(b)(28)(I) because the new equipment is subject to 40 CFR Part 60, Subpart IIII; therefore, the revision is **subject to a 45-day EPA review**, Rule 3003 and **public notice** requirements, Rule 3006.

PART 2 STATE REGULATIONS

California Environmental Quality Act (CEQA)

This project does not trigger CEQA and is exempt from further CEQA action since it does not have the potential to generate significant adverse environmental impacts.

PART 3 FEDERAL REGULATIONS

Part 60, NSPS — **Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines** — **July 11, 2006**

§60.4200 - §60.4219

Subpart IIII regulates stationary compression ignition (CI) IC engines such as those proposed at ConocoPhillips-Carson. For engines with a maximum engine power greater than or equal to 50 HP, §60.4205(c) of this subpart states that fire pump engines with a displacement of less than 30 liters per cylinder must comply with:

Maximum Engine Power, bhp	Tier	Model Year	NMHC+NOx	CO	PM
			gram/bhp-hr		
300≤bhp<600	3	2009+	3.0	2.6	0.15
This engine 327 bhp	3	2009	2.461	1.417	0.118

For the life of the engine, §60.4206 requires the operator to operate and maintain the engine according to the manufacturer's written instructions or procedures. §60.4207(a) and (b) requires the engine to only be fueled with diesel that meets minimum federal requirements.

§60.4209(a) requires the installation of a non-resettable hour meter. Maintenance checks and testing is limited to 100 hour per year in accordance with §60.4211(e). NSPS initial notification under Subpart A and Subpart IIII is waived for emergency stationary engines (§60.4214(b)).

Compliance is expected since the Subpart IIII requirements are equivalent or superseded by more stringent District rules.

Part 63, NESHAP — **Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines** — **January 18, 2008**

§63.6580 - §63.6675

Subpart ZZZZ, otherwise known as RICE MACT, regulates stationary reciprocating internal combustion engines (RICE). The proposed IC engines are subject to the RICE MACT regulation as "new stationary RICE." In accordance with §63.6590(c), a new stationary RICE that is located at a major source of HAP emissions and is a compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP, must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII. No further requirements apply for such engines under this part.

CONCLUSION:

Based on the evaluation above, each emergency IC engine will comply with all applicable District, State, and Federal rules and regulations. Therefore, the following is recommended:

A/N	Equipment	Recommendation
498235	Internal Combustion Engine, Emergency Fire Pump	Approve PC with conditions
498236	Internal Combustion Engine, Emergency Fire Pump	Approve PC with conditions
498245	TV/RECLAIM Facility Permit Amendment	Approve Plan

Appendix A - Emission Calculations

ConocoPhillips - Carson
A/N 498235 & 498236

Engine data

Engine hp	327	hp
Engine manufacturer	Cummins	
Fuel type	Diesel	
Fuel rate	16.4	gal/hour
EPA non-road engine	No	Tier 3
Date manufactured	2009	

Engine operating limits

max hr/day	4.2	hour
max hr/month	4.2	hour
max hr/year	50	hour

PM10/PM	0.96

Emission factors	R1	units	R2	units
NOx (BACT limit)	3.000	g/bhp-hr	3.000	g/bhp-hr
ROG (Manufacturer)	0.123	g/bhp-hr	0.123	g/bhp-hr
CO (Manufacturer)	1.417	g/bhp-hr	1.417	g/bhp-hr
SOx (RECLAIM)	0.142	g/bhp-hr	0.142	g/bhp-hr
PM (Manufacturer)	0.118	g/bhp-hr	0.118	g/bhp-hr
PM10 (Calc.)	0.113	g/bhp-hr	0.113	g/bhp-hr

Emission calculations	lb/hour		lb/day max		30-day avg - lb/day		lb/year	
	R1	R2	R1	R2	R1	R2	R1	R2
NOx	2.16	2.16	9.08	9.08	0.30	0.30	108.04	108.04
ROG	0.09	0.09	0.37	0.37	0.01	0.01	4.43	4.43
CO	1.02	1.02	4.29	4.29	0.14	0.14	51.03	51.03
SOx	0.10	0.10	0.43	0.43	0.01	0.01	5.12	5.12
PM	0.08	0.08	0.36	0.36	0.01	0.01	4.25	4.25
PM10	0.08	0.08	0.34	0.34	0.01	0.01	4.08	4.08

SOx emission factor = (6.24 lb / 1000 gal) * Fuel rate / Engine bhp * 454 g/lb Rule 2002, Table 2, based on 500 ppm sulfer diesel
Nox emission factor = BACT limit Rule 2002, Table 1, see discussion under Rule 2012
ROG, CO, PM emission factors from engine manufacturer data; PM10 = 0.96 * PM

Emissions (lb/hr) = gr/bhp-hr * hp rating * 1 lb/454 grams
Emissions (lb/day max) = lb/hr * max hr/day

B. NSR 30-day and lb/year values
NSR 30-day avg (lb/day) = lb/hr * max hr/month / 30 day
lb/year = lb/day * max lb/year